REMARKS

Claims 1-8 remain present in this application.

The specification and claims 1, 3 and 4 have been amended. Reconsideration of the application, as amended, is respectfully requested.

Rejection Under 35 U.S.C. 102(b)

Claims 1 and 2 stand rejected under 35 USC 102(b) as being anticipated by Hirose et al., Japanese document 10-047920. This rejection is respectfully traversed.

Claims 3-8 stand rejected under 35 USC 102(b) as being anticipated by Hirose et al., in view of Sano et al., Japanese document 08-035828. This rejection is respectfully traversed.

Independent claim 1 of the present application recites a method for calibrating a laser three-dimensional digitizing sensor. The method comprises 1) defining a three-dimensional coordinator X-Y-Z, 2) providing a calibrating surface, 3) projecting a laser light plane onto the calibrating surface to form a bright line thereon, wherein the laser light plane and the bright line are parallel to X-Z plane 4) translating the calibrating surface along the Z axis to establish a first mapping table of a two-dimensional digital image to the Z coordinate, and 5) rotating the calibrating surface by a predetermined first angle along the Y axis then translating along the Z axis to establish a second mapping table of the two-dimensional digital image to the Z coordinate according to the first mapping table.

Hirose et al. teaches a calibration method which can improve accuracy by eliminating an error resulting from a binarization processing. When a measurement plate 1 as a calibration object is subjected to yaw revolution, pitch revolution and movement in a longitudinal direction

relative to a three-dimensional visual sensor 4, the three-dimensional visual sensor 4 acquires a depth map at each movement point. The depth map so acquired is then processed to obtain a three-dimensional coordinates value of each pixel for each depth map, and a calibration value is obtained from this three-dimensional coordinates value.

It is noted that Hirose et al. fails to teach or suggest "projecting a laser light plane onto the calibrating surface to form a bright line thereon, wherein the laser light plane and the bright line are parallel to X-Z plane" (emphasis added), as is recited in independent claim 1 and can be seen in Fig. 2 of the present application. In Hirose et al.'s calibration method, grid lines on a measurement surface of the measurement plate 1 are used as coordinate patterns when detecting the images. Unlike Hirose et al., the present application detects images by directly projecting a laser light plane on the calibrating surface parallel to the base plane (X-Z plane) without grid lines, thereby simplifying the calibration processes.

In order to anticipate a claim, a reference must teach every element of the claim. For at least the reasons described above, it is respectfully submitted that Hirose et al. fails to teach or suggest all of the limitations found in independent claim 1. Accordingly, it is respectfully submitted that the prior art utilized by the Examiner fails to teach or suggest the method of independent claim 1, as well as its dependent claims.

With regard to independent claim 3, in this claim, the laser light plane is parallel to the base plane. Further, in independent claim 4, a laser sensor fixed to the base plane generates a light plane parallel to the base plane. It is respectfully submitted that neither Hirose et al. nor Sano et al. teaches or suggests these limitations of the laser light plane from independent claims 3 and 4.

It is respectfully submitted that the calibration methods of Hirose et al. and Sano et al. require grid lines or lattice points as coordinate patterns when detecting the images, rather than directly projecting a laser light plane parallel to the base plane (X-Z plane), as can be found in the present application. Accordingly, it is respectfully submitted that the prior art utilized by the Examiner fails to teach or suggest the method of independent claim 3 or independent claim 4 and its dependent claims.

Conclusion

Favorable reconsideration and an early Notice of Allowance are earnestly solicited.

Because the additional prior art cited by the Examiner has been included merely to show the state of the prior art and has not been utilized to reject the claims, no further comments concerning these documents are considered necessary at this time.

In the event that any outstanding matters remain in this application, the Examiner is invited to contact the undersigned at (703) 205-8000 in the Washington, D.C. area.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), the Applicants respectfully petition for a one (1) month extension of time for filing a response in connection with the present application and the required fee of $120.00 is attached herewith.

KM/asc

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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